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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,739	12/29/2003	Peter William Lorraine	RD25422-1	6640
6147	7590	11/29/2004	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			SAINT SURIN, JACQUES M	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/747,739	Applicant(s) LORRAINE ET AL.	
	Examiner Jacques M Saint-Surin	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003 and 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☒ Claim(s) 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figs. 1, 2a-2b must be labeled as prior art. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Lorraine (US Patent 6,182,512).

Regarding claim 12, Lorraine discloses a method for imaging anisotropic media comprising:

slicing the anisotropic media, irradiating the anisotropic media with a point acoustic source (the source laser 12 irradiates the article 14 with a laser beam along its surface at a plurality of scanning positions, see: col. 2, lines 62-64);

scanning the anisotropic media with a receiver (as the reflected ultrasonic waves return to the scanning position, a detection laser 18 is used to detect either displacement or velocity at the surface by simultaneously irradiating the surface of the article with another laser beam, see: col. 3, lines 13-17) to map out a sound field;

determining a time delay in an acoustic wave from the sound field (in synthetic aperture focusing, however, reflected signals obtained at different scan positions are coherently summed by delaying each signal a specified time period to focus the reflected signal which diverges from the reflector 16); and

incorporating the time delay into an algorithm to provide enhanced resolution and sensitivity for the image (Synthetic aperture focusing allows the signals reflected in different directions from the reflector to be synthetically focused to produce an image with improved resolution, see: col. 3, lines 46-49). Lorraine further teaches the image in SAFT is formed by summing the detected waveforms $U(x_j, y_j, z_j, t)$ across the reception aperture, see: col. 3, line 67 and 4, lines 1-18).

Regarding claim 13, Lorraine discloses the equation in col. 4, lines 5 and 13.

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Regarding claim 14, Lorraine discloses a laser 12.

Allowable Subject Matter

4. Claims 1-11 are allowable over the prior art of record.
5. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose “calculating an acoustic wave velocity at all necessary points, determining an acoustic path length based on each selected point in the anisotropic media and the receiver position, determining a time delay for each acoustic wave between each image point and the receiver position on the surface of the anisotropic media; calculating a sum for each point selected based on the appropriate acoustic wave velocities and the acoustic path lengths, and generating an image of the anisotropic media using the coherent sums generated for each said image point selected” as recited in claim 1. These limitations are neither taught nor made obvious by the prior art of record.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rogers et al. (US Patent 5,672,830) discloses measuring anisotropic mechanical properties of thin films.

White et al. (US Patent 6,128,081) discloses a method and system for measuring a physical parameter of at least one layer of a multilayer article without damaging the article and sensor head for use therein.


Dixon et al. (US Patent 6,769,307) discloses a method and system for processing measurement signals to obtain a value for a physical parameter.

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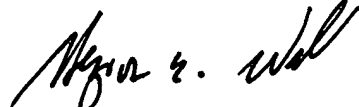
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jacques M. Saint-Surin
November 17, 2004



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

10/147,739

DETAILED ACTION***Drawings***

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November 08, 2004



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